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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,107	09/12/2003	Harry Bims	1875.7300003	6489

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1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

AJAYI, JOEL

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/661,107	Applicant(s) BIMS, HARRY	
	Examiner JOEL AJAYI	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-17,19-21,23-31 and 33-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-17, 19-21, 23-31, 33-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

As indicated in the Pre- Appeal decision mailed 12/13/10, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4-17, 19-21, 23-31, 33-35 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4-11, 15-17, 20, 21, 23-26, 29-31, 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grybos et al. (U.S. Patent Number: 5,926,758)** in view of **Tsuboike et al. (U.S. Patent Number: 6,023,604)**.

Consider **claim 1**; Grybos discloses a method comprising: configuring a plurality of repeaters (satellites) operating at a substantially identical communication frequency [e.g. satellites B1, B2 (col. 9, lines 1-5)] to coordinate transmissions of data packets and thereby function as an access point with respect to first and second mobile stations [user terminals 20 (col. 7, lines 38-42)] that are wirelessly communicatively coupled to the plurality of repeaters [satellites (col. 8, lines 39-67)]; determining within the plurality of repeaters (satellites) whether wirelessly transmitting first and second packets to the first and second mobile stations [user terminals 20 (col. 7, lines 38-42)], respectively, will create interference between the first and second packets [e.g. if they overlap and simultaneously transmit, interference will occur (col. 9, lines 1-9, 13-18)]; and wirelessly transmitting the first and second packets to the first and second mobile stations [user terminal 20 (col. 7, lines 38-42)], respectively, at different times [a schedule is made (col. 10, lines 19-27; col. 10, line 48 – col. 11, line 8)] when it is determined that transmitting the first and second packets will create interference (col. 9, lines 1-9, 13-18).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claims 2, 17, 21, 31**; Grybos discloses operating the plurality of repeaters (satellite) as a communication channel in accordance with a wireless communication protocol (col. 5, lines 21-40).

Consider **claim 4**; Grybos discloses scheduling, at a switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)] coupled to the plurality of repeaters (satellites), transmissions of the first packet and the second packet to avoid interference that would prevent one or both of the transmissions from being received by the first and second mobile stations (col. 10, lines 11-30, 41-46).

Consider **claims 5, 16, 25**; Grybos discloses detecting whether concurrent transmission of the first and second packets will cause interference prior to performing the scheduling (col. 9, lines 1-9); and transmitting the first and second packets to the first and second mobile stations without performing the scheduling, if overlapping transmissions of the first and second packets will not cause interference [no overlapping, therefore no interference, therefore no need for a schedule (col. 9, lines 13-23, 63-66)].

Consider **claim 6**; Grybos discloses if substantially concurrent transmission of the first and second packet causes interference, the method further comprises: transmitting the first and second packets to the first and second mobile stations [user terminals 20 (col. 7, lines 38-42)], respectively, according to the schedule (col. 10, line 48 – col. 11, line 8).

Consider **claim 7**; Grybos discloses coordinately scheduling, at the plurality of repeaters (satellites), transmissions of the first packet and the second packet to avoid interference that would prevent one or both of the transmissions from being received by the first and second mobile stations (col. 10, line 48 – col. 11, line 8).

Consider **claim 8**; Grybos discloses determining whether the first and second packets are to be transmitted substantially simultaneously to the first and second mobile stations (col. 9, lines 1-9); and transmitting the first and second packets to the first and second mobile stations at different time slots to avoid the interference, if the first and second packets are selected for substantially simultaneous transmission (col. 10, line 48 – col. 11, line 8).

Consider **claim 9**; Grybos discloses maintaining in a first database (conventional computing means) information (position of satellites) regarding whether communications of one of the plurality of repeaters will interfere with another of the plurality of repeaters (col. 10, lines 19-27).

Consider **claims 10, 23**; Grybos discloses examining the first database (conventional computing means) to determine whether communications of a selected one of the plurality of repeaters will interfere with another of the plurality of repeaters [determination is made based on the position of the satellites (col. 10, lines 19-30)]; and delaying one of the first and second packets to be transmitted by the selected repeater to the respective mobile station (col. 10, line 48 – col. 11, line 8).

Consider **claim 11**; Grybos discloses periodically transmitting a test packet (orbital data and radio frequency assignment) to collect interference information [e.g. ephemeris data that can lead to interference (col. 10, lines 11-30)].

Consider **claim 15**; Grybos discloses a method, comprising: receiving, at a switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], first and second data packets designated for transmission to a first mobile station and a second mobile station (col. 7, lines 28-31), respectively [the transmissions occur respectively to avoid interference (col. 8, lines 39-67)], via a plurality of repeaters (satellites) transmitting on a substantially identical communication frequency [e.g. satellites B1, B2 (col. 9, lines 1-5)]; detecting whether overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions [e.g. if they overlap and simultaneously transmit, interference will occur (col. 9, lines 1-9, 13-18)]; and scheduling transmissions of the first and second packets via the plurality of repeaters (satellites) to avoid the interference [a schedule is made (col. 10, lines 19-27; col. 10, line 48 – col. 11, line 8)] if it is determined that overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions (col. 9, lines 1-9, 13-18).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claim 20**; Grybos discloses a method, comprising: receiving, at a switch [as disclosed in the specification the switch can be a session management and location tracking unit,

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which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], a packet destined to a mobile station (col. 7, lines 28-31); determining, at the switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], whether immediately transmitting the packet to the mobile station will cause an interference with other communications destined to the mobile station (col. 8, line 39-col. 9, line 23); and transmitting the packet to a communication device (satellite/repeater) communicatively coupled to the switch (as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18) (col. 9, line 63-col.10, line 10), wherein the packet is forwarded wirelessly to the mobile station (col. 9, line 63-col.10, line 10) when it is determined that transmitting the packet will not cause interference (col. 10, line 48-col. 11, line 8), wherein the communication device and other communication devices (satellite/repeater) coupled to the switch transmit at a substantially identical communication frequency and coordinate transmissions of data packets station (col. 8, line 48 – col. 9, line 23), thereby functioning as an access point with respect to the mobile (col. 9, lines 63-66).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claim 24**; Grybos discloses scheduling the transmission of the packet at an alternative time slot where no other communications destined to the mobile station are occurring if it is determined that no interference would otherwise occur (col. 10, line 48 - col. 11, line 8).

Consider **claim 26**; Grybos discloses determining a communication device closest to the mobile station (col. 8, lines 39-52); and scheduling, based in part on a location of the closest communication device, the transmission of the packet to the mobile station, such that there are no other communications occurring to the mobile station (col. 8, line 48 – col. 9, line 23).

Consider **claim 29**; Grybos discloses a method, comprising: a plurality of communication devices (satellites/repeaters) coupled to a switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)] (col. 8, lines 39-67), the plurality of communication devices (satellites/repeaters) communicating wirelessly over a substantially the same communication frequency with one or more mobile stations (col. 8, lines 39-67), wherein the plurality of communication devices (satellites/repeaters) coordinate transmissions of data packets to function as an access point with respect to the one or more mobile stations (col. 7, lines 38-40), the coordinating including determining, at the switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], whether immediately transmitting the packets to the one or more mobile station via the plurality of communication devices will cause an interference with other communications to the one or more mobile stations (col. 8, line 39-col. 9, line 23).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claim 30**; Grybos discloses that the switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)] manages communications between the plurality of communication devices and the one or more mobile stations (col. 7, lines 28-31).

Consider **claim 33**; Grybos discloses an apparatus comprising: means for configuring a plurality of repeaters (satellites) operating at a substantially identical communication frequency [e.g. satellites B1, B2 (col. 9, lines 1-5)] to coordinate transmissions of data packets and thereby function as an access point with respect to first and second mobile stations [user terminals 20 (col. 7, lines 38-42)] that are wirelessly communicatively coupled to the plurality of repeaters [satellites (col. 8, lines 39-67)]; means for determining within the plurality of repeaters (satellites) whether wirelessly transmitting first and second packets to the first and second mobile stations [user terminals 20 (col. 7, lines 38-42)], respectively, will create interference between the first and second packets [e.g. if they overlap and simultaneously transmit, interference will occur (col. 9, lines 1-9, 13-18)]; and means for wirelessly transmitting the first and second packets to the first and second mobile stations [user terminal 20 (col. 7, lines 38-42)], respectively, at different times [a schedule is made (col. 10, lines 19-27; col. 10, line 48 – col. 11, line 8)] when it is

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determined that transmitting the first and second packets will create interference (col. 9, lines 1-9, 13-18).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claim 34**; Grybos discloses an apparatus, comprising: means for receiving, at a switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], first and second data packets designated for transmission to a first mobile station and a second mobile station (col. 7, lines 28-31), respectively [the transmissions occur respectively to avoid interference (col. 8, lines 39-67)], via a plurality of repeaters (satellites) transmitting on a substantially identical communication frequency [e.g. satellites B1, B2 (col. 9, lines 1-5)]; means for detecting whether overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions [e.g. if they overlap and simultaneously transmit, interference will occur (col. 9, lines 1-9, 13-18)]; and means for scheduling transmissions of the first and second packets via the plurality of repeaters (satellites) to avoid the interference [a schedule is made (col. 10, lines 19-27; col. 10, line 48 – col. 11, line 8)] if it is determined that overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions (col. 9, lines 1-9, 13-18).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Consider **claim 35**; Grybos discloses a method, comprising: means for receiving, at a switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], a packet destined to a mobile station (col. 7, lines 28-31); means for determining, at the switch [as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18 (col. 10, lines 11-30, 41-46)], whether immediately transmitting the packet to the mobile station will cause an interference with other communications destined to the mobile station (col. 8, line 39-col. 9, line 23); and means for transmitting the packet to a communication device (satellite/repeater) communicatively coupled to the switch (as disclosed in the specification the switch can be a session management and location tracking unit, which is the function of relay station 18) (col. 9, line 63-col.10, line 10), wherein the packet is forwarded wirelessly to the mobile station (col. 9, line 63-col.10, line 10) when it is determined that transmitting the packet will not cause interference (col. 10, line 48-col. 11, line 8), wherein the communication device and other communication devices (satellite/repeater) coupled to the switch transmit at a substantially identical communication

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frequency and coordinate transmissions of data packets station (col. 8, line 48 – col. 9, line 23), thereby functioning as an access point with respect to the mobile (col. 9, lines 63-66).

Grybos discloses the claimed invention except: repeaters.

In an analogous art Tsuboike discloses that it is well known in the art for satellites to be repeaters (col. 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Grybos by disclosing that satellites can also be repeaters, as taught by Tsuboike, for the purpose of enhancing communication in a satellite system.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grybos et al.** (U.S. Patent Number: 5,926,758) in view of **Tsuboike et al.** (U.S. Patent Number: 6,023,604), further in view of **Shanley** (U.S. Patent Number: 5,093,927).

Consider **claim 12**; Grybos and Tsuboike disclose the claimed invention except: maintaining in a second database a list of mobile stations and a corresponding plurality of repeaters that last received transmissions from the mobile stations.

In an analogous art Shanley discloses maintaining in a second database (memory) a list of mobile stations (communication units) and a corresponding plurality of repeaters that last received transmissions from the mobile stations (col. 2, lines 26-44; col. 3, lines 38-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Grybos and Tsuboike by including a record of repeaters and mobile stations engaged in communication, as taught by Shanley, for the purpose of keeping track of interference within the communication resources.

Consider **claim 13**; Grybos discloses delaying transmissions of one of the first and second packets to the respective mobile station if the transmissions from the corresponding plurality of repeaters associated to the first and second mobile stations will interfere with each other (col. 10, line 48 – col. 11, line 8) except: examining the second database to determine whether the corresponding plurality of repeaters associated with the first and second mobile stations, when transmitting substantially currently, will interfere with each other.

In an analogous art Shanley discloses examining the second database (memory) to determine whether the corresponding plurality of repeaters associated with the first and second mobile stations (communication units), when transmitting substantially currently (col. 2, lines 26-44), will interfere with each other (col. 3, lines 38-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Grybos and Tsuboike by including a record of repeaters and mobile stations engaged in communication, as taught by Shanley, for the purpose of keeping track of interference within the communication resources.

Allowable Subject Matter

Claims 14, 19, 27, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

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Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joel Ajayi whose telephone number is (571) 270-1091. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Joel Ajayi/

Examiner, Art Unit 2617

/LESTER KINCAID/

Supervisory Patent Examiner, Art Unit 2617